



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,267	12/21/2001	Jeffery D. Lind	8350.1642-00	4973

7590 04/11/2006

Finnegan, Henderson, Farabow,
Garrett & Dunner, L.L.P.
1300 I Street, N.W.
Washington, DC 20005-3315

EXAMINER

ALHIJA, SAIF A

ART UNIT	PAPER NUMBER
----------	--------------

2128

DATE MAILED: 04/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/024,267

Applicant(s)

LIND, JEFFERY D.

Examiner

Saif A. Alhija

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-29,31-41 and 43-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-29,31-41 and 43-51 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>3/8/06</u> |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/21/01</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-7, 9-29, 31-41, and 43-51 have been presented for examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 2, 4, 6, 11, 15, 26, 31, 33, 39, 43, 50 and 51 are rejected** under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 50 and 51 recite a “power source for enabling the machine to travel and perform work operations.” It is unclear if the power source is being simulated or is merely present in the model. Appropriate correction is required.

Claims 2, 4, 6, 11, 15, 26, 31, 33, 39, and 43 recite the word “may.” The word renders the claim vague indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

All claims dependent upon rejected base claims are rejected by virtue of their dependency.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2128

3. **Claim(s) 1-7, 9-29, 31-41, and 43-49 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Bradbury et al. "System and Method for Rapidly Customizing a Design and Remotely Manufacturing Biomedical Devices using a Computer System." U.S. Patent Publication # 2002/0007294, hereafter referred to as Bradbury.**

Regarding Claim 1:

Bradbury discloses A method for simulating one or more components, comprising:
establishing an engineering model of a component (**Paragraph 15, Lines 7-8**);
receiving selection data for configuring the component from a user (**Paragraph 15, Lines 3-5**);
lightening the engineering model using a model reduction process (**Paragraph 26, Lines 1-5**);
establishing a web-based model of the component based on the selection data and the lightened engineering model (**Paragraph 14, Lines 3-5**);
and performing a simulation of the web-based model (**Paragraph 14, Lines 7-9**).

Regarding Claim 2:

Bradbury discloses The method of claim 1, wherein performing the simulation of the web-based model includes: performing the simulation of the web-based model in a simulation environment such that the user may manipulate the web-based model over a network to perform virtual operations. (**Paragraph 22, Lines 2-6**)

Regarding Claim 3:

Bradbury discloses The method of claim 1, further including: providing, to the user, feedback data reflecting characteristics of the web-based model during the simulation. (**Paragraph 29, Lines 1-3**)

Regarding Claim 4:

Bradbury discloses The method of claim 1, wherein receiving selection data includes: providing an option to the user reflecting a sub-component that may be associated with the component, wherein the selection data includes the sub component selected by the user. **(Paragraph 26, Lines 1-5)**

Regarding Claim 5:

Bradbury discloses The method of claim 4, wherein providing an option further includes: providing, to the user, a web-based model of the sub-component based on a corresponding engineering model of the sub-component. **(Paragraph 14, Lines 3-5)**

Regarding Claim 6:

Bradbury discloses The method of claim 5, wherein the web-based model of the sub-component is a 3D image of the sub-component that may be manipulated by the user. **(Paragraph 22, Lines 1-2 and Paragraph 26, Lines 1-5)**

Regarding Claim 7:

Bradbury discloses The method of claim 1, wherein establishing a web-based model of the component includes: detecting a change to the engineering model of the component; and updating the web-based model of the component based on the detected change. **(Paragraph 29, Lines 1-3)**

Regarding Claim 9:

Bradbury discloses The method of claim 1, wherein the web-based model is a 3D image model. **(Paragraph 22, Lines 1-2)**

Regarding Claim 10:

Bradbury discloses The method of claim 1, wherein the web-based model includes a 3D image model of the component and textual data associated with at least one of physical, functional, and marketing characteristics of the component. **(Paragraph 31, Lines 1-5)**

Regarding Claim 11:

Bradbury discloses The method of claim 1, wherein performing a simulation of the web-based model includes: providing, to the user, one or more options reflecting various simulation environments that the web-based model may be simulated within; receiving a selection from the user reflecting a selected simulation environment; and performing a simulation of the web-based model in the selected simulation environment. **(Paragraph 27, Lines 5-8)**

Regarding Claim 12:

Bradbury discloses The method of claim 1, wherein performing a simulation of the web-based model includes: allowing the user to control the operation of the web-based model using an input interface; and performing simulations of the web-based model in the simulation environment based on data received from the input interface. **(Paragraph 15, Lines 3-5)**

Regarding Claim 13:

Bradbury discloses The method of claim 2, wherein the simulation environment includes a simulated load and wherein performing a simulation of the web-based model includes simulating a manipulation of the simulated load by the web-based model. **(Paragraph 32, Lines 5-12 and Paragraph 34, Lines 1-4)**

Regarding Claim 14:

Bradbury discloses The method of claim 13, further including: providing, to the user, feedback data reflecting at least one of physical and functional characteristics of the web-based model based on the simulated manipulation. **(Paragraph 32, Lines 5-12)**

Regarding Claim 15:

Bradbury discloses The method of claim 2, wherein the simulation environment includes a simulated work environment reflecting any type of terrain, underwater, water surface, outer space, subterranean, and atmospheric work environment that may be associated with the configured web-based model, and wherein performing a simulation of the web-based model includes simulating operation of the web-based model in the simulated work environment. **(Paragraph 26, Lines 12-15)**

Regarding Claim 16:

Bradbury discloses The method of claim 15, further including: providing, to the user, feedback data reflecting at least one of physical and functional effects of the web-based model based on the simulated operation in the simulated work environment. **(Paragraph 32, Lines 5-12)**

Regarding Claim 17:

Bradbury discloses The method of claim 1, wherein the simulation environment includes a simulated surface and wherein performing a simulation of the web-based model includes simulating operation of the web-based model on the simulated surface. **(Paragraph 32, Lines 5-12)**

Regarding Claim 18:

Art Unit: 2128

Bradbury discloses The method of claim 17, further including: providing, to the user, feedback data reflecting at least one of physical and functional characteristics of the web-based model based on the simulated operation. **(Paragraph 32, Lines 5-12)**

Regarding Claim 19:

Bradbury discloses The method of claim 2, wherein the simulation environment includes a type of work environment and a work operation to be performed by the web-based model in the work environment. **(Paragraph 32, Lines 5-12)**

Regarding Claim 20:

Bradbury discloses The method of claim 19, wherein performing the simulation of the web-based model includes: establishing a plurality of duplicate web-based models of the component; and simulating the work operation in the work environment using the duplicate web-based models. **(Paragraph 15, Lines 3-5, and 7-8 and Paragraph 14, Lines 3-5, and 7-9)**

Regarding Claim 21:

Bradbury discloses The method of claim 20, further including: providing, to the user, feedback data reflecting characteristics of the duplicate web-based models during the simulated work operation **(Paragraph 29, Lines 1-3).**

Regarding Claim 22:

Bradbury discloses The method of claim 20, further including: providing, to the user, feedback data reflecting performance information associated with the work operation in the work environment. **(Paragraph 32, Lines 5-12)**

Regarding Claim 23:

Bradbury discloses The method of claim 20, wherein simulating the work operation in the work environment further includes: allowing the user to adjust the number of duplicate web-based models performing the work operation and to adjust the configuration of the duplicate web-based models.

(Paragraph 35, Lines 5-8)

Regarding Claim 24:

Bradbury discloses The method of claim 2, wherein the simulation environment is a virtual repair environment. **(Paragraph 14, Lines 10-12 and Paragraph 33, Lines 9-13)**

Regarding Claim 25:

Bradbury discloses The method of claim 24, wherein performing simulations of the web-based model includes: allowing the user to perform a virtual repair of the web-based model in the virtual repair environment. **(Paragraph 32, Lines 5-12)**

Regarding Claim 26:

Bradbury discloses The method of claim 2, wherein the simulation environment is a virtual training environment and performing simulations of the web-based model includes providing instructional information to the user while the user operates the web-based model in the virtual training environment, wherein the instructional information may include at least one of image, voice, and textual information instructing the user on the operation of the web-based model. **(Paragraph 32, 5-12)**

Regarding Claim 27:

Art Unit: 2128

Bradbury discloses A system for simulating one or more components, comprising:

- a client system operated by a user;
- and a server system, including:
 - a process for receiving configuration data from the client system reflecting a configuration of a component selected by the user;
 - a process for establishing a web-based model of the component based on the configuration data and the lightened engineering model of the component;
 - a process for providing, to the client system, a simulation of the web-based model performing virtual operations in a simulated environment;
 - and a processor for executing the processes for receiving, lightening, creating, and providing.

(Paragraph 14, Lines 3-5, 7-9 and Paragraph 5, Lines 3-5, 7-8. Paragraph 26, Lines 1-5)

Regarding Claim 28:

Bradbury discloses The system of claim 27, wherein the process for providing includes a process for providing, to the client system, feedback data reflecting characteristics of the web-based model during the simulation. **(Paragraph 29, Lines 1-3)**

Regarding Claim 29:

Bradbury discloses The system of claim 27, wherein the process for establishing a web-based model of the component includes: a process for detecting a change to the engineering model of the component; and a process updating the web-based model of the component based on the detected change. **(Paragraph 29, Lines 1-3)**

Regarding Claim 31:

Art Unit: 2128

Bradbury discloses The system of claim 27, wherein the process for providing a simulation of the web-based model includes: a process for providing, to the client system, one or more options reflecting various simulation environments that the web-based model may be simulated within; a process for receiving a selection from the client system reflecting a simulation environment selected by the user; and a process for performing a simulation of the web-based model in the selected simulation environment.

(Paragraph 27, Lines 5-8)

Regarding Claim 32:

Bradbury discloses The system of claim 31, wherein the process for providing a simulation of the web-based model includes: a process for receiving input data from the client system; and a process for manipulating the web-based model in the selected simulation environment based on the input data.

(Paragraph 15, Lines 3-5)

Regarding Claim 33:

Bradbury discloses The system of claim 27, wherein the process for performing a simulation of the web-based model includes a process for simulating operation of the web-based model in a simulation environment, wherein the simulation environment includes a simulated work environment reflecting any type of terrain, underwater, water surface, outer space, subterranean, and atmospheric work environment that may be associated with the configured web-based model and wherein the process for performing a simulation of the web-based model includes a process for simulating operation of the web-based model in a simulated work environment. **(Paragraph 26, Lines 12-15)**

Regarding Claim 34:

Art Unit: 2128

Bradbury discloses The system of claim 33, further including: a process for providing feedback data reflecting at least one of physical and functional characteristics of the web-based model during the simulating operation. **(Paragraph 32, Lines 5-12)**

Regarding Claim 35:

Bradbury discloses The system of claim 27, wherein the process for providing the simulation of the web-based model includes: a process for establishing a plurality of duplicate web-based models of the component; and a process for simulating a selected work operation in the selected simulation environment using the duplicate web-based models. **(Paragraph 15, Lines 3-5, and 7-8 and Paragraph 14, Lines 3-5, and 7-9)**

Regarding Claim 36:

Bradbury discloses The system of claim 35, further including: a process for providing feedback data reflecting characteristics of the duplicate web-based models during the simulated work operation. **(Paragraph 29, Lines 1-3)**

Regarding Claim 37:

Bradbury discloses The system of claim 27, wherein the process for providing a simulation of the web-based model includes a process for simulating a virtual repair of the web-based model in a simulation environment. **(Paragraph 32, Lines 5-12)**

Regarding Claim 38:

Bradbury discloses A computer-readable medium including instructions for performing a method, when executed by a processor, for simulating one or more components, the method comprising:

Art Unit: 2128

establishing an engineering model of a component of a machine;
lightening the engineering model using a model reduction process; (**Paragraph 26, Lines 1-5**);
receiving selection data for configuring the component from a user;
establishing a web-based model of the component based on the selection data and the lightened engineering model;
and performing a simulation of the web-based model. (**Paragraph 14, Lines 3-5, 7-9 and Paragraph 5, Lines 3-5, 7-8**)

Regarding Claim 39:

Bradbury discloses The computer-readable medium of claim 38, wherein performing a simulation of the web-based model includes:

performing a simulation of the web-based model in a simulation environment such that a user may manipulate the web-based model over a network to perform virtual operations. (**Paragraph 22, Lines 2-6**)

Regarding Claim 40:

Bradbury discloses The computer-readable medium of claim 38, further including: providing, to the user, feedback data reflecting characteristics of the web-based model during the simulation. (**Paragraph 29, Lines 1-3**)

Regarding Claim 41:

Bradbury discloses The computer-readable medium of claim 38, wherein establishing a web-based model of the component includes: detecting a change to the engineering model of the component; and updating the web-based model of the component based on the detected change. (**Paragraph 29,**

Art Unit: 2128

Lines 1-3)

Regarding Claim 43:

Bradbury discloses The computer-readable medium of claim 38, wherein performing a simulation of the web-based model includes: providing one or more options reflecting various simulation environments that the web-based model may be simulated within; receiving a selection from the client system reflecting a simulation environment selected by the user; and performing a simulation of the web-based model in the selected simulation environment. **(Paragraph 27, Lines 5-8)**

Regarding Claim 44:

Bradbury discloses The computer-readable medium of claim 43, wherein performing a simulation of the web-based model includes: receiving input data; and manipulating the web-based model in the selected simulation environment based on the input data. **(Paragraph 15, Lines 3-5)**

Regarding Claim 45:

Bradbury discloses The computer-readable medium of claim 39, wherein the simulation environment includes a simulated work environment reflecting any type of terrain, underwater, water surface, outer space, subterranean, and atmospheric work environment that may be associated with the configured web-based model and wherein performing a simulation of the web-based model includes simulating operation of the web-based model in the simulated work environment. **(Paragraph 26, Lines 12-15)**

Regarding Claim 46:

Bradbury discloses The computer-readable medium of claim 45, further including: providing, to a user, feedback data reflecting at least one of physical and functional effects of the web-based model based on the simulated operation in the simulated work environment. **(Paragraph 32, Lines 5-12)**

Regarding Claim 47:

Bradbury discloses The computer-readable medium of claim 38, wherein performing the simulation of the web-based model includes: establishing a plurality of duplicate web-based models of the component; and simulating a selected work operation in the selected simulation environment using the duplicate web-based models. **(Paragraph 15, Lines 3-5, and 7-8 and Paragraph 14, Lines 3-5, and 7-9)**

Regarding Claim 48:

Bradbury discloses The computer-readable medium of claim 47, further including: providing, to a user, feedback data reflecting characteristics of the duplicate web-based models during the simulated work operation. **(Paragraph 29, Lines 1-3)**

Regarding Claim 49:

Bradbury discloses The computer-readable medium of claim 38, wherein performing a simulation of the web-based model includes simulating a virtual repair of the web-based model in a simulation environment. **(Paragraph 32, Lines 5-12)**

Regarding Claim 50:

Bradbury discloses a method for simulating one or more components of a work machine, comprising:

Art Unit: 2128

Establishing an engineering model of a component of a work machine that includes at least one power source for enabling the machine to travel and perform work operations; **(Paragraph 15, Lines 7-8. Paragraph 86, Lines 11-15)**

Receiving selection data for configuring the component from a user over a network;
(Paragraph 15, Lines 3-5)

Establishing a web-based model of the component based on the selection data and the engineering model; **(Paragraph 14, Lines 3-5)**

and performing a simulation of the web-based model. **(Paragraph 14, Lines 7-9).**

Regarding Claim 51:

Bradbury discloses a system for simulating one or more components of a work machine, comprising;

A client system operated by a user; and **(Paragraph 14, Lines 3-5, and 7-9)**

A server system, **(Paragraph 14, Lines 3-5, and 7-9)** including:

A process for receiving configuration data from the client system reflecting a configuration of a component, selected by the user, of a work machine that includes a power source for enabling the machine to travel and perform work operations; **(Paragraph 15, Lines 3-5. Paragraph 86, Lines 11-15)**

A process for establishing a web-based model of the component based on the configuration data and an engineering model of the component; **(Paragraph 15, Lines 3-5. Paragraph 86, Lines 11-15)**

A process for providing, to the client system, a simulation of the web-based model;
(Paragraph 14, Lines 7-9)

Art Unit: 2128

And a processor for executing the processes for receiving, creating, and providing.

(Paragraph 14, Lines 7-9)

4. **Claim(s) 1-7, 9-29, 31-41, and 43-51 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Jayaram et al. "Virtual Assembly Design Environment", U.S. Patent Application No. 2002/0123812, hereafter referred to as Jayaram.**

Regarding Claim 1:

Jayaram discloses A method for simulating one or more components, comprising:
establishing an engineering model of a component (**Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30**);
receiving selection data for configuring the component from a user (**Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30**);
lightening the engineering model using a model reduction process (**Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30**);
establishing a web-based model of the component based on the selection data and the lightened engineering model (**Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30**);
and performing a simulation of the web-based model (**Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30**).

Regarding Claim 2:

Jayaram discloses The method of claim 1, wherein performing the simulation of the web-based model includes: performing the simulation of the web-based model in a simulation environment such that the user may manipulate the web-based model over a network to perform virtual operations. (**Abstract.**

Art Unit: 2128

Paragraph 5-8, 224, 297-298. Figures 6 and 30)

Regarding Claim 3:

Jayaram discloses The method of claim 1, further including: providing, to the user, feedback data reflecting characteristics of the web-based model during the simulation. **(Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30)**

Regarding Claim 4:

Jayaram discloses The method of claim 1, wherein receiving selection data includes: providing an option to the user reflecting a sub-component that may be associated with the component, wherein the selection data includes the sub component selected by the user. **(Paragraph 10)**

Regarding Claim 5:

Jayaram discloses The method of claim 4, wherein providing an option further includes: providing, to the user, a web-based model of the sub-component based on a corresponding engineering model of the sub-component. **(Paragraph 10)**

Regarding Claim 6:

Jayaram discloses The method of claim 5, wherein the web-based model of the sub-component is a 3D image of the sub-component that may be manipulated by the user. **(Paragraph 16)**

Regarding Claim 7:

Jayaram discloses The method of claim 1, wherein establishing a web-based model of the component includes: detecting a change to the engineering model of the component; and updating the

Art Unit: 2128

web-based model of the component based on the detected change. **(Paragraph 209)**

Regarding Claim 9:

Jayaram discloses The method of claim 1, wherein the web-based model is a 3D image model.
(Paragraph 16)

Regarding Claim 10:

Jayaram discloses The method of claim 1, wherein the web-based model includes a 3D image model of the component and textual data associated with at least one of physical, functional, and marketing characteristics of the component. **(Figure 6 and 30)**

Regarding Claim 11:

Jayaram discloses The method of claim 1, wherein performing a simulation of the web-based model includes: providing, to the user, one or more options reflecting various simulation environments that the web-based model may be simulated within; receiving a selection from the user reflecting a selected simulation environment; and performing a simulation of the web-based model in the selected simulation environment. **(Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30)**

Regarding Claim 12:

Jayaram discloses The method of claim 1, wherein performing a simulation of the web-based model includes: allowing the user to control the operation of the web-based model using an input interface; and performing simulations of the web-based model in the simulation environment based on data received from the input interface. **(Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30)**

Regarding Claim 13:

Jayaram discloses The method of claim 2, wherein the simulation environment includes a simulated load and wherein performing a simulation of the web-based model includes simulating a manipulation of the simulated load by the web-based model. **(Paragraph 299)**

Regarding Claim 14:

Jayaram discloses The method of claim 13, further including: providing, to the user, feedback data reflecting at least one of physical and functional characteristics of the web-based model based on the simulated manipulation. **(Figures 6 and 30)**

Regarding Claim 15:

Jayaram discloses The method of claim 2, wherein the simulation environment includes a simulated work environment reflecting any type of terrain, underwater, water surface, outer space, subterranean, and atmospheric work environment that may be associated with the configured web-based model, and wherein performing a simulation of the web-based model includes simulating operation of the web-based model in the simulated work environment. **(Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30)**

Regarding Claim 16:

Jayaram discloses The method of claim 15, further including: providing, to the user, feedback data reflecting at least one of physical and functional effects of the web-based model based on the simulated operation in the simulated work environment. **(Figures 6 and 30)**

Regarding Claim 17:

Jayaram discloses The method of claim 1, wherein the simulation environment includes a simulated surface and wherein performing a simulation of the web-based model includes simulating operation of the web-based model on the simulated surface. (**Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30**)

Regarding Claim 18:

Jayaram discloses The method of claim 17, further including: providing, to the user, feedback data reflecting at least one of physical and functional characteristics of the web-based model based on the simulated operation. (**Figures 6 and 30**)

Regarding Claim 19:

Jayaram discloses The method of claim 2, wherein the simulation environment includes a type of work environment and a work operation to be performed by the web-based model in the work environment. (**Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30**)

Regarding Claim 20:

Jayaram discloses The method of claim 19, wherein performing the simulation of the web-based model includes: establishing a plurality of duplicate web-based models of the component; and simulating the work operation in the work environment using the duplicate web-based models. (**Abstract. Paragraph 5-8, 224, 231, 297-298. Figures 6 and 30**)

Regarding Claim 21:

Art Unit: 2128

Jayaram discloses The method of claim 20, further including: providing, to the user, feedback data reflecting characteristics of the duplicate web-based models during the simulated work operation (Abstract. Paragraph 5-8, 224, 231, 297-298. Figures 6 and 30)

Regarding Claim 22:

Jayaram discloses The method of claim 20, further including: providing, to the user, feedback data reflecting performance information associated with the work operation in the work environment. (Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30)

Regarding Claim 23:

Jayaram discloses The method of claim 20, wherein simulating the work operation in the work environment further includes: allowing the user to adjust the number of duplicate web-based models performing the work operation and to adjust the configuration of the duplicate web-based models. (Abstract. Paragraph 5-8, 224, 231, 297-298. Figures 6 and 30)

Regarding Claim 24:

Jayaram discloses The method of claim 2, wherein the simulation environment is a virtual repair environment. (Paragraph 91)

Regarding Claim 25:

Jayaram discloses The method of claim 24, wherein performing simulations of the web-based model includes: allowing the user to perform a virtual repair of the web-based model in the virtual repair environment. (Paragraph 91)

Regarding Claim 26:

Jayaram discloses The method of claim 2, wherein the simulation environment is a virtual training environment and performing simulations of the web-based model includes providing instructional information to the user while the user operates the web-based model in the virtual training environment, wherein the instructional information may include at least one of image, voice, and textual information instructing the user on the operation of the web-based model. **(Abstract. Paragraph 5-8, 224, 231, 297-298. Figures 6 and 30)**

Regarding Claim 27:

Jayaram discloses A system for simulating one or more components, comprising:

- a client system operated by a user; **(Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30);**
- and a server system, including: **(Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30);**
- a process for receiving configuration data from the client system reflecting a configuration of a component selected by the user; **(Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30);**
- a process for establishing a web-based model of the component based on the configuration data and the lightened engineering model of the component; **(Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30);**
- a process for providing, to the client system, a simulation of the web-based model performing virtual operations in a simulated environment; **(Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30);**
- and a processor for executing the processes for receiving, lightening, creating, and providing. **(Abstract. Paragraph 5-8, 224, 231, 297-298. Figures 6 and 30)**

Regarding Claim 28:

Jayaram discloses The system of claim 27, wherein the process for providing includes a process for providing, to the client system, feedback data reflecting characteristics of the web-based model during the simulation. **(Figures 6 and 30)**

Regarding Claim 29:

Jayaram discloses The system of claim 27, wherein the process for establishing a web-based model of the component includes: a process for detecting a change to the engineering model of the component; and a process updating the web-based model of the component based on the detected change. **(Paragraph 209)**

Regarding Claim 31:

Jayaram discloses The system of claim 27, wherein the process for providing a simulation of the web-based model includes: a process for providing, to the client system, one or more options reflecting various simulation environments that the web-based model may be simulated within; a process for receiving a selection from the client system reflecting a simulation environment selected by the user; and a process for performing a simulation of the web-based model in the selected simulation environment. **(Abstract. Paragraph 5-8, 224, 231, 297-298. Figures 6 and 30)**

Regarding Claim 32:

Jayaram discloses The system of claim 31, wherein the process for providing a simulation of the web-based model includes: a process for receiving input data from the client system; and a process for

Art Unit: 2128

manipulating the web-based model in the selected simulation environment based on the input data.

(Abstract. Paragraph 5-8, 224, 231, 297-298. Figures 6 and 30)

Regarding Claim 33:

Jayaram discloses The system of claim 27, wherein the process for performing a simulation of the web-based model includes a process for simulating operation of the web-based model in a simulation environment, wherein the simulation environment includes a simulated work environment reflecting any type of terrain, underwater, water surface, outer space, subterranean, and atmospheric work environment that may be associated with the configured web-based model and wherein the process for performing a simulation of the web-based model includes a process for simulating operation of the web-based model in a simulated work environment. **(Abstract. Paragraph 5-8, 224, 231, 297-298. Figures 6 and 30)**

Regarding Claim 34:

Jayaram discloses The system of claim 33, further including: a process for providing feedback data reflecting at least one of physical and functional characteristics of the web-based model during the simulating operation. **(Figures 6 and 30)**

Regarding Claim 35:

Jayaram discloses The system of claim 27, wherein the process for providing the simulation of the web-based model includes: a process for establishing a plurality of duplicate web-based models of the component; and a process for simulating a selected work operation in the selected simulation environment using the duplicate web-based models. **(Abstract. Paragraph 5-8, 224, 231, 297-298. Figures 6 and 30)**

Regarding Claim 36:

Art Unit: 2128

Jayaram discloses The system of claim 35, further including: a process for providing feedback data reflecting characteristics of the duplicate web-based models during the simulated work operation.

(Abstract. Paragraph 5-8, 224, 231, 297-298. Figures 6 and 30)

Regarding Claim 37:

Jayaram discloses The system of claim 27, wherein the process for providing a simulation of the web-based model includes a process for simulating a virtual repair of the web-based model in a simulation environment. **(Paragraph 91)**

Regarding Claim 38:

Jayaram discloses A computer-readable medium including instructions for performing a method, when executed by a processor, for simulating one or more components, the method comprising:

establishing an engineering model of a component of a machine; **(Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30);**

lightening the engineering model using a model reduction process; **(Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30);**

receiving selection data for configuring the component from a user; **(Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30);**

establishing a web-based model of the component based on the selection data and the lightened engineering model; **(Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30);**

and performing a simulation of the web-based model. **(Abstract. Paragraph 5-8, 224, 231, 297-298. Figures 6 and 30)**

Regarding Claim 39:

Art Unit: 2128

Jayaram discloses The computer-readable medium of claim 38, wherein performing a simulation of the web-based model includes:

performing a simulation of the web-based model in a simulation environment such that a user may manipulate the web-based model over a network to perform virtual operations. (**Abstract.**

Paragraph 5-8, 224, 231, 297-298. Figures 6 and 30)

Regarding Claim 40:

Jayaram discloses The computer-readable medium of claim 38, further including: providing, to the user, feedback data reflecting characteristics of the web-based model during the simulation. (**Figures 6 and 30)**

Regarding Claim 41:

Jayaram discloses The computer-readable medium of claim 38, wherein establishing a web-based model of the component includes: detecting a change to the engineering model of the component; and updating the web-based model of the component based on the detected change. (**Paragraph 209)**

Regarding Claim 43:

Jayaram discloses The computer-readable medium of claim 38, wherein performing a simulation of the web-based model includes: providing one or more options reflecting various simulation environments that the web-based model may be simulated within; receiving a selection from the client system reflecting a simulation environment selected by the user; and performing a simulation of the web-based model in the selected simulation environment. (**Abstract. Paragraph 5-8, 224, 231, 297-298. Figures 6 and 30)**

Regarding Claim 44:

Jayaram discloses The computer-readable medium of claim 43, wherein performing a simulation of the web-based model includes: receiving input data; and manipulating the web-based model in the selected simulation environment based on the input data. (**Abstract. Paragraph 5-8, 224, 231, 297-298. Figures 6 and 30**)

Regarding Claim 45:

Jayaram discloses The computer-readable medium of claim 39, wherein the simulation environment includes a simulated work environment reflecting any type of terrain, underwater, water surface, outer space, subterranean, and atmospheric work environment that may be associated with the configured web-based model and wherein performing a simulation of the web-based model includes simulating operation of the web-based model in the simulated work environment. (**Abstract. Paragraph 5-8, 224, 231, 297-298. Figures 6 and 30**)

Regarding Claim 46:

Jayaram discloses The computer-readable medium of claim 45, further including: providing, to a user, feedback data reflecting at least one of physical and functional effects of the web-based model based on the simulated operation in the simulated work environment. (**Abstract. Paragraph 5-8, 224, 231, 297-298. Figures 6 and 30**)

Regarding Claim 47:

Jayaram discloses The computer-readable medium of claim 38, wherein performing the simulation of the web-based model includes: establishing a plurality of duplicate web-based models of the

Art Unit: 2128

component; and simulating a selected work operation in the selected simulation environment using the duplicate web-based models. (**Abstract. Paragraph 5-8, 224, 231, 297-298. Figures 6 and 30**)

Regarding Claim 48:

Jayaram discloses The computer-readable medium of claim 47, further including: providing, to a user, feedback data reflecting characteristics of the duplicate web-based models during the simulated work operation. (**Abstract. Paragraph 5-8, 224, 231, 297-298. Figures 6 and 30**)

Regarding Claim 49:

Jayaram discloses The computer-readable medium of claim 38, wherein performing a simulation of the web-based model includes simulating a virtual repair of the web-based model in a simulation environment. (**Paragraph 91**)

Regarding Claim 50:

Jayaram discloses a method for simulating one or more components of a work machine, comprising:

Establishing an engineering model of a component of a work machine that includes at least one power source for enabling the machine to travel and perform work operations; (**Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30**);

Receiving selection data for configuring the component from a user over a network; (**Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30**);

Establishing a web-based model of the component based on the selection data and the engineering model; (**Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30**);

Art Unit: 2128

and performing a simulation of the web-based model. **(Abstract. Paragraph 5-8, 91, 224, 231, 297-298. Figures 6 and 30)**

Regarding Claim 51:

Jayaram discloses a system for simulating one or more components of a work machine, comprising;

A client system operated by a user; and **(Abstract. Paragraph 5-8, 224, 297-298.**

Figures 6 and 30);

A server system, including: **(Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30);**

A process for receiving configuration data from the client system reflecting a configuration of a component, selected by the user, of a work machine that includes a power source for enabling the machine to travel and perform work operations; **(Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30);**

A process for establishing a web-based model of the component based on the configuration data and an engineering model of the component; **(Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30);**

A process for providing, to the client system, a simulation of the web-based model; **(Abstract. Paragraph 5-8, 224, 297-298. Figures 6 and 30);**

and a processor for executing the processes for receiving, creating, and providing. **(Abstract. Paragraph 5-8, 91, 224, 231, 297-298. Figures 6 and 30)**

Response to Arguments

Applicant's arguments filed 25 August 2005 have been fully considered but they are not persuasive.

- A) Applicant argues that **Bradbury** does not disclose lightening the engineering model based on a model reduction process. However, **Bradbury** does disclose *“removal or addition of material” (Paragraph 26, Lines 2-3)* of the model. This would in fact cause the model of the component discussed in **Bradbury** to become lighter or heavier and is therefore a model reduction process.
- B) Applicant argues that **Bradbury** does not teach a process for manipulating the web-based model in a selected simulation environment based on input data. However, **Bradbury** does disclose, *“Creating multi-dimensional model advantageously allows trying out different surgical approaches, attachment points, final cosmetic fit and the like.” (Paragraph 27, Lines 5-7)* as well as *“CAD software allows geometric manipulation of an original design of a part such as to add material...” (Paragraph 25, Lines 4-6)*. **Bradbury** discloses the ability of the user to manipulate the design component as well determining and manipulating the components characteristic abilities in order to conform to a needed final design.
- C) Applicant argues that **Bradbury** does not disclose establishing an engineering model. However, **Bradbury** does disclose *“a multi-dimensional model is constructed from transmitted data” (Paragraph 15, Lines 7-8)*. A model constructed based on data is an engineering model. An engineering model is defined as the practical application of science to commerce or industry that can result in a building or structure, map, geological survey, patent, schematic drawing, technical report. In addition, **Bradbury** discloses *“products as complicated as automobiles, to cut inventories and to offer more*

Art Unit: 2128

individualized and yet still rapid response to customer needs by manufacturing to order” (Paragraph 86, Lines 11-15). Manufacturing to order of an automobile is also an example of an engineering model.

- D) Applicant argues that **Bradbury** does not disclose receiving selection data for configuring the component from a user. However, **Bradbury** does disclose, *“patient specific data ... provided by the attending physician regarding the surgical or reconstruction site.” (Paragraph 15, Lines 3-5).* The patient specific data disclosed in Bradbury is a form of selection data resulting in the configuration of the component.

Conclusion

5. All Claims are rejected.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saif A. Alhija whose telephone number is (571) 272-8635. The examiner can normally be reached on M-F, 11:00-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Kamini Shah can be reached on (571) 272-2279. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

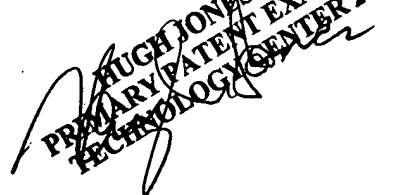
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 10/024,267

Page 32

Art Unit: 2128

March 30, 2006


HUGH JONES Ph.D.
PRIMARY PATENT EXAMINER
TECHNOLOGY CENTER 2100